MONTANA UNDERGROUND STORAGE TANK PROGRAM NEWSLETTER

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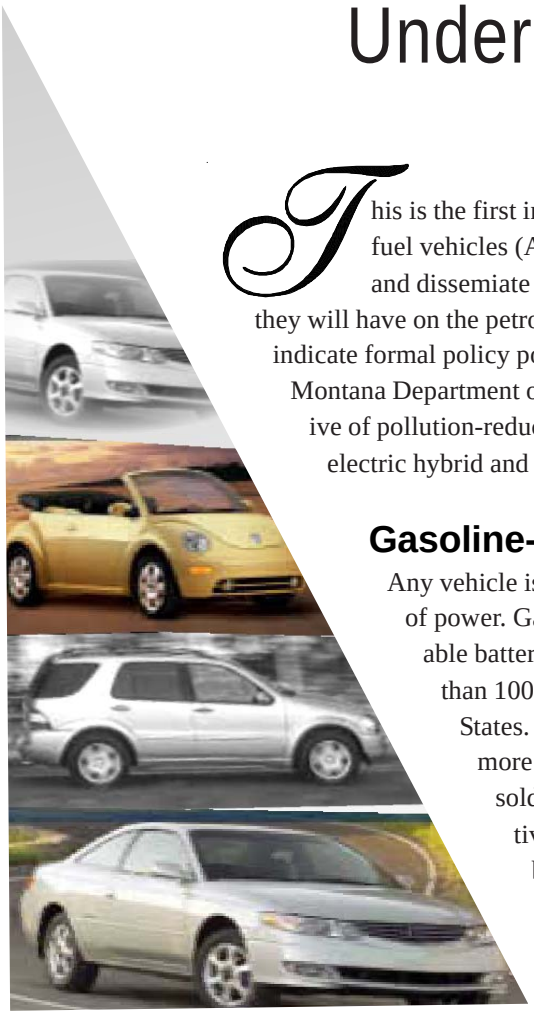
High Mileage Under the Big Sky



This is the first in a series of articles that will discuss alternative fuel vehicles (AFVs). Their purpose is to generate discussion and dissemiate information about these vehicles and the impact they will have on the petroleum industry in Montana. These articles do not indicate formal policy positions or product recommendations by the Montana Department of Environmental Quality. The DEQ is supportive of pollution-reducing vehicles and will be obtaining gasoline-electric hybrid and ethanol-85 vehicles in 2005.

Gasoline-Electric Hybrid Vehicles

Any vehicle is a hybrid when it combines two or more sources of power. Gasoline-electric hybrid cars run off a rechargeable battery and gasoline. Over the past four years, more than 100,000 hybrids have been sold in the United States. Even though that's not a huge percentage of the more than 17 million new cars and trucks that are sold in the U.S. each year, it's enough of an incentive to get more manufacturers on the hybrid bandwagon. Analysts suggest that the market in 2004, could muster up the sales of the past four combined.

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Below are some of the models manufacturers soon plan to integrate into the consumer market.

Manufacturer	Model	Model Year
Daimler-Chrysler	Dodge Ram	2005
Daimler-Chrysler	Mercedes S-class	2006
Ford	Escape	2005
General Motors	Chevy Equinox	2006
General Motors	Chevy Silverado	2005
General Motors	GMC-Sierra	2005
General Motors	Saturn-VUE	2005
Lexus	RX Hybrid SUV	2005
Toyota	Highlander	2005

Flex-fuel Vehicles

Flex-fuel vehicles (FFV) have a single fuel tank, fuel system, and engine. The vehicles are designed to run on regular unleaded gasoline and an alcohol fuel (either ethanol or methanol) in any mixture - for example, 100% gasoline, E85 (85% ethanol, 15% gasoline), or M85 (85% methanol, 15% gasoline) or any combination of these fuels.

Bi-fuel Vehicles

A bi-fuel vehicle has two separate fuel systems, with the capability to easily switch from one to the other. The vehicle can be powered by either system. One fuel system is usually designed to run on gasoline or diesel, in order to assure a readily available fuel source. In currently available U.S. models, the other fuel system is usually designed to run on compressed natural gas (CNG) or propane (LPG).

Compressed Natural Gas (CNG)

Gasoline powered vehicles can be modified to use compressed natural gas. Vehicles can be designed for the dedicated use of CNG, or more commonly as bi-fuel vehicles which can use either CNG or gasoline.

Liquified Petroleum Gas (LPG)

Gasoline-powered vehicles can be modified to use LPG (more commonly known as propane). LPG has been used to provide energy for transportation for over 60 years, and LPG vehicles are the most common alternative fuel vehicles. Vehicles can be designed for the dedicated use of propane or as bi-fuel vehicles that can use either propane or gasoline.

Diesel and Bio-diesel

Advances in ICE Technology are leading to more fuel-efficient diesel cars. Unlike diesel engines sold in this country during the 1970s and 80s, modern passenger car diesels are quieter, smoother, more responsive and almost entirely free of diesel odor. They are also substantially more energy efficient and considerably cleaner.

The “new” diesel engines directly inject fuel into the combustion chamber rather than having part of the combustion occur in a prechamber (indirect injection). The advanced fuel injectors atomize the fuel into a fine mist in two stages; the combustion chamber “swirls” the air and fuel; and a computerized electronic management system controls the engine operation and turbocharger, fine-tuning the entire process for fuel efficiency and emission control. This process eliminates heat loss, increases fuel economy by 20% over conventional diesels (40-50% over conventional gasoline engines), and softens the combustion process, making the ride seem more like a gasoline engine.

Additionally all the new diesel engines will run on Biodiesel. Biodiesel is the name of an alternative fuel that contains no petroleum. Biodiesel can be blended at any level with petroleum diesel to create a biodiesel blend and can be used in compression-ignition (diesel) engines with no major modifications.

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Fuel Cell Vehicles

Although they are not expected to reach the mass market before 2010, fuel cell vehicles (FCVs) may someday revolutionize on-road transportation. This emerging technology has the potential to significantly reduce energy use and harmful emissions, as well as our dependence on foreign oil. FCVs will have other benefits as well.

FCVs represent a radical departure from vehicles with conventional internal combustion engines. Like battery-electric vehicles, FCVs are propelled by electric motors. But while battery electric vehicles use electricity from an external source (and store it in a battery), FCVs create their own electricity. Fuel cells onboard the vehicle creates electricity through a chemical process using hydrogen fuel and oxygen from the air.

FCVs can be fueled with pure hydrogen gas stored onboard in high-pressure tanks. They also can be fueled with hydrogen-rich fuels; such as methanol, natural gas, or even gasoline; but these fuels must first be converted into hydrogen gas by an onboard device called a "reformer."

FCVs fueled with pure hydrogen emit no pollutants; only water and heat; while those using hydrogen-rich fuels and a reformer produce only small amounts of air pollutants. In addition, FCVs can be twice as efficient as similarly sized conventional vehicles and may also incorporate other advanced technologies to increase efficiency.

The majority of this article is reproduced from the www.fueleconomy.gov and **www.biodiesel.org, http://auto.howstuffworks.com/hybrid-car10.htm** websites. ■

Leaking Storage Tanks Threaten Idaho Groundwater

Originally published Nov. 17, 2004 by Michelle Dunlop
Twin Falls, Idaho, Times-News
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BOISE — According to a recent round of investigations, about two-thirds of the state's underground storage tanks put Idaho's groundwater at risk by failing to meet federal regulations.

"The bottom line is we found only one in three facilities complying with key operational requirements," said Jim Werntz, Idaho's state director for the Environmental Protection Agency. "While some in the industry are doing everything right, there are a large number of facilities in Idaho that are not making leak detection and prevention a priority."

Last month, EPA inspectors visited 76 Idaho underground storage tank facilities from Coeur d'Alene to Lewiston and from the Treasure Valley to Idaho Falls. The purpose of the inspections was not to detect tank leaks, but rather to ensure the proper tank operation. Inspectors identified 93 violations with several facilities being cited for multiple violations. The EPA issued $14,550 in penalties.

"This inspection is aimed specifically to make sure the equipment is in place," said Mark MacIntyre, with EPA's Region 10 office in Seattle. "We do the prevention part."

The agency's findings come one day after the 20th anniversary of the federal Underground Storage Tank Program. Since the program began, regulators have been working with facilities to meet compliance standards — installing leak detection systems, correcting problems with corrosion, replacing and closing tanks. Tank owners had until December of 1998 to meet the federal requirement.

"During the early inception of the program, there were a lot of handouts and brochures given out," said Erik Sirs, Idaho's coordinator and inspector for EPA. "Based on my own individual inspections, compliance rates were fairly low."

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A large number of facility owners still act surprised when the EPA fines them for not knowing how to use their leak detection equipment correctly, Sirs said.

"There is a reluctance," he said.

Idaho remains one of the few states in the nation without its own underground tank program. The regional EPA office conducts prevention inspections, like the one in October, while the Idaho Department of Environmental Quality assists in leak investigations.

Due to the low compliance rates in the state, the EPA made the decision to increase inspections in an effort to force facilities to meet the requirements. Of the 1,350 known underground storage tank facilities, some have yet to be inspected, Sirs said.

"I would anticipate in the near future we would inspect facilities for the second time," Sirs said. "The trend was that they were doing a little better."

While he could not release the names of facilities visited, Sirs noted that only five or six locations in the Twin Falls area were inspected last month.

Inspectors found that 52 percent of violations were due to a lack of leak detection equipment, improper operation of that equipment and missing or incomplete records. Sirs believes the state numbers hold true for Magic Valley.

Since 2003, more than 230 facilities across the state have been visited during three major inspections occurring in October 2003 and April and October 2004. The agency has handed out more than $48,000 in penalties since October 2003.

"This should be a concern not just to EPA, but to every Idaho resident who drinks water or irrigates from a well," Werntz said. ■

PTRCB Business Meeting Dates

Here are the Petro Board's projected meeting dates for the rest of 2005:

- March 21, 2005
- May 23, 2005
- July 18, 2005
- September 12, 2005
- November 7, 2005

State law proscribes the powers and duties of the board:

"The board shall meet at least quarterly for the purposes of reviewing and approving claims for reimbursement from the fund and conducting other business as necessary." ■

Tank Management 101

You Too Can Be a "Professional" UST System Owner/Operator

by Marcel Moreau

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I am a firm believer in the power of words. For as long as I've been in the tank business, and for a long time before, tank-owner types have been neatly compartmented as "major oil," "oil jobber," "private," "government," and, of course, "mom and pop." While these labels have some utility in characterizing UST ownership, they do not address a vastly more important characteristic—the quality of UST management. If we are to enlist the power of words in the quest for better UST management, I believe we need to adopt some new labels. I would like to introduce two new terms to describe tank owner/operator managers: "the professional" and "the amateur."

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The amateur versus the professional

Professional storage system managers are fully aware of the hazardous nature of fuel storage and their responsibility to supply us with the fuel we need in ways that are as protective of human health and the environment as possible. They have a keen sense of responsibility and continually strive to acquire knowledge about and practice the skills of their profession.

Amateur storage system owner/operators are barely aware of the hazards posed by their activities and their corresponding responsibility to protect human health and the environment. Many operate in blissful ignorance of the standards of their industry and the potential consequences of their activities. Simply stated, the problem with UST management in this country is that there are too many amateurs in charge of our UST systems. The ultimate goal of UST regulatory programs is to have a universe of UST systems that are managed in a professional manner. The regulatory challenge then becomes one of finding ways to institute or encourage the amateur tank manager to make the upgrade to professional tank manager. While new words do not necessarily make this challenge any easier, they can help to frame the issues in a more concrete manner. So, what do professional tank managers need to help them do their job better? One basic need is relevant information. Where can an inquisitive UST manager go to get the information she or he needs to do a professional job? To put my words where my soap box is, I developed two lists: a short list of technological Achilles' heels that have led to the downfall of too many USTs and a list of behavioral Achilles' heels that seem to bedevil UST managers. They are not by any means complete lists, but these issues continue to resonate in my experience with USTs, UST operators, and UST release incidents.

The technological Achilles' heels of UST systems

UST equipment vendors and installers prefer to give UST owners and operators the impression that the technology they are selling will protect an UST system against all manner of accidents that may have befallen such systems in days of yore.

While some of the issues have changed, the fact remains that no UST system can be permanently vaccinated against releases. An UST manager's greatest vulnerability may, in fact, be this sense of invulnerability. Professional UST managers should know enough about their storage systems to recognize the likely weak points. Only then can they take steps to ensure that their Achilles' heels do not receive that fatal arrow. Following is my list of Achilles' heels that professional UST managers should evaluate with regard to each storage system for which they are responsible:

Strike plates

"Strike plates" or "wear plates" are steel reinforcing plates that are installed beneath tank openings. In fiberglass tanks, they protect against the impact of the gauge stick. In steel tanks, they protect against corrosion problems that can occur when water is not promptly removed from a tank. In 1985, strike plates became standard beneath all fiberglass tank openings. For about 10 years prior to that year, they were present only beneath openings intended to be fill openings. The presence of a strike plate in a fiberglass tank can be determined by lowering a strong magnet on a string down the fill pipe and seeing if it "sticks." Strike plates became an optional component of STI-P3 tanks beginning in 1982 and a standard component beneath all tank openings in 1987. If your steel tank warranty includes both internal and external corrosion protection, then the tank has strike plates installed. Older steel tanks that have been upgraded by internal lining often have a strike plate installed beneath the fill opening as part of the lining procedure. The absence of strike plates is a cause for concern, especially for fiberglass tanks. Fortunately, there are retrofit devices known as "tank bottom protectors" that are inexpensive and easy to install in fiberglass or steel tanks that provide equivalent protection to strike plates. If you have any doubts about whether your tanks are equipped with strike plates, install retrofit tank bottom protectors sooner rather than later. Tank bottom protectors are cheap insurance against potentially major releases.

Working capacity

Most tank owners assume that if they requested and paid for a 10,000-gallon tank, then the tank will hold 10,000 gallons. What most tank owners don't know is that the "nominal capacity" of a tank (e.g., the facility has three 10,000-gallon tanks) is not the same as the actual tank

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capacity (the maximum volume of liquid that a tank will actually hold as listed on the tank chart). In addition, the actual capacity of motor fuel tanks can be reduced by as much as 10 percent because of the installation of overfill prevention devices. Since 1987, steel tanks have been required by their construction standard (UL 58) to hold no less than their nominal capacity, so the actual capacity of a steel tank is usually equal to or slightly more than the nominal capacity. The fiberglass tank construction standard, UL 1316, has no similar capacity specification. While many fiberglass tanks do, in fact, hold their nominal capacity, a few sizes—notably those with a nominal capacity of 10,000 gallons—have actual capacities that are significantly less. For example, an 8-foot-diameter, 10,000-gallon tank manufactured by Owens Corning has an actual capacity of 9,728 gallons, while an 8-foot diameter, 10,000-gallon Xerxes tank holds 9,816 gallons in the single-walled version and 9,684 gallons in the double-walled version. These actual capacities are further reduced by overfill prevention hardware that is intended to shut off or restrict flow into the tank at a point that is substantially below the actual capacity of the tank. Information concerning the level at which the overfill device will trigger (what I call the "working capacity") is hardly ever conveyed to the UST manager. If they are unfamiliar with working capacity, tank mangers are more likely to order more fuel than will fit in the tank, which, because of the problems inherent in overfill prevention hardware, results in frustrated delivery personnel, opportunities for spills, and the creation of hazardous situations. (See LUSTLine #21, "What Every Tank Owner Should Know About Overfill Prevention," and #31, "If Only Overfill Prevention Worked.") Professional UST managers must know the working capacity of their tanks and should plan fuel deliveries so that the liquid volume in the tank never exceeds the working capacity.

Type of overfill prevention installed in the tank

Not all overfill prevention devices are compatible with all types of tank delivery techniques. UST owner/operators should know both the type of overfill prevention installed and some details of the method of fuel delivery into the tank. (Refer to LUSTLine #21 for a discussion of overfill prevention hardware.) Here are things you should know about your delivery procedures:

- **Gravity versus pumped flow**
  Briefly, product is usually delivered into larger underground tanks by gravity flow from the tanker to the UST. In this case, product is metered into the truck but is not metered when it is delivered into the UST. In some cases, especially for military, government, post office, municipal, and school facility tanks, delivery contracts require that the quantity of fuel be metered directly into the tank. In most cases, when a meter is introduced into the delivery process, a pump is used to push the product through the meter and into the UST so as not to slow down the delivery. The distinction between gravity and pumped deliveries is extremely important for accident-free deliveries.

- **Loose- versus tight-fill connections**
  Most often, delivery hoses are tightly clamped to the fill pipe opening during the delivery (tight-fill). Occasionally, however, delivery hoses are connected to a short length of pipe that is loosely inserted into a fill pipe (loose-fill), the same way you fuel your car. Loose fills can present a fire hazard, because flammable vapors can be released at grade around the fill pipe. NFPA 30 limits loose fills for Class I liquids (e.g., gasoline) to tanks of 1,000 gallons or less. As a general rule, tight-fill deliveries are preferable to loose-fill deliveries.

- **Direct- versus remote-fill pipes**
  Fill pipes usually enter directly into the tank (straight- or direct-fill). But if tanker access is a problem, the fill pipe opening may be some distance from the tank (remote-fill). When a remote-fill is installed, there is almost always a direct-fill as well that is used as a gauge opening for measuring the product level. Often, the remote-fill is joined to the direct-fill with a below-grade "T" connection.

- **Drop-tube devices for over-fill prevention**
  Devices installed in the drop tube of USTs (commonly called flapper valves or shut-off devices) should not be used with:

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- Pressurized deliveries, because they are not designed to withstand the extra pressure produced by the pump and will fail.
- Loose fills, because when the over-fill device closes, product will rapidly back up the fill pipe and spill onto the ground. If the pipe that is inserted into the fill pipe is too long, it will interfere with the closing of the over-fill device.
- Remote-fills, unless there is a "trap door" at the top of the direct-fill pipe that automatically closes, except when a gauge stick is inserted. Drivers often leave the cap for the direct-fill off during the delivery, because they stick the tank before and after the delivery and do not see the need to replace the cap during the delivery. If the flapper valve closes with the cap off, product will flow up the fill pipe and onto the ground, rather than down the fill pipe into the tank.

- **Float vent valves for over-fill prevention**
  Float vent valves are not compatible with a number of common UST features (including suction pumps, coaxial Stage I vapor recovery, pressurized deliveries, and remote-fill pipes) and are a poor method of over-fill prevention even when they work as they are intended. (See *LUSTLine* #21 and #31 for more information.) My recommendation is to remove all float vent valves and replace them with drop-tube shut-off devices and over-fill alarms.

- **Alarms for over-fill prevention**
  Over-fill alarms can generally be used with all types of delivery equipment, but they must be located where they will alert the delivery driver, not the cash register attendant or the facility manager. Be sure that they are clearly labeled so the driver knows what they are and loud enough to awaken a dozing delivery person.

Pressurized pumping systems

Pressurized pumping systems are the most common cause of major releases of petroleum products. Most retail facilities today have this type of pumping system. If you're not sure, remove the dispenser covers and check to see whether you have any pulleys and v-belts inside the dispenser. If these items are absent, you have pressurized piping. Frequent and effective leak detection on pressurized piping is critical. Submersible pumps should be equipped with *electronic* line leak detectors (see *LUSTLine* #29, "Of Blabbermouths and Tattletales—The Life and Times of Automatic Line Leak Detectors") that search for small leaks whenever the piping is idle for a half-hour or so, and secondary containment with a sensor to continuously monitor for leaks. Anything less for leak detection on pressurized piping is foolhardy.

Dispensers

Dispensers have lots of connections and fittings that can come loose and leak. Depending on the location, some of these leaks can remain undetected by inventory control, line leak detectors, and line tightness testing, although they can almost always be seen if you bother to look. Remove dispenser side panels once a week and conduct a thorough visual inspection. Check around filters, meters, and unions for evidence of moisture or drips. Look in the dispenser pan or the soil beneath the dispenser for evidence of drips or moisture. If you see anything that looks like it might even be thinking about leaking, have it attended to right away.

Spill containment manholes

Spill containment manholes around fill pipes are a maintenance headache, because they accumulate water, product, dirt, rags, cigarette butts, styrofoam cups, and so on. They are also subject to use and abuse from delivery personnel. In addition, they are orphans—facility operators seem to think that it is the delivery person's responsibility to maintain them, and delivery personnel believe they are the responsibility of the facility operator. Failure to keep spill containment manholes clean and functional can lead to a variety of problems, ranging from water and dirt in the fuel (remember that these devices generally drain into the tank) to improper attachment of delivery hoses (in northern climates, they can fill with ice to the point where they interfere with the delivery hose connection) that can lead to spills. Check spill containment manholes weekly and remove and properly dispose of any dirt, water, or product that may be present. If drain mechanisms are broken or gaskets or seals are torn, have them fixed right away.

Secondary containment

If you have invested in secondary containment, you've made a wise decision. However, make sure that you have

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gotten and continue to get the protection that you paid for. Double-walled tanks are reasonably trouble free, but secondarily contained piping can be a problem child. Be sure that your piping is completely contained by checking whether you have containment sumps both under your dispensers and at the tank top. If you have no sumps under your dispensers, plan to add some sooner rather than later. If you have no tank top sumps, then, in my book, you haven't got secondary containment. Tank top sumps are prone to filling up with water whenever it rains. However, do not rest easy simply because your sumps never have much water in them. Maybe they do not accumulate water because they are not liquid-tight. If water is leaking out, so will product, and you don't have secondary containment. If you are having secondarily contained piping installed, be sure that the installer tests both dispenser and tank top sumps according to the manufacturer's instructions to ensure that they are liquid-tight at the time of installation. Testing is usually done by filling the sumps with water and letting them sit for a period of time to see whether the water drains out. If you have existing secondary containment, have it tested on an annual basis to verify that the containment is liquid-tight. There have been cases in Maine where tank owners were rudely surprised to find that what appeared to be a minor leak contained in a sump turned out to be a major release that escaped through the bottom of a leaky sump.

The Behavioral Achilles' Heels of UST Management

Know your leak detection system

Do you know what your leak detection system is detecting? Does it check your tanks, piping, or both? Does it conduct tests periodically or relatively continuously? How does it alert you to a suspected release? How does it alert you if something is not quite right with the leak detection system itself? What is the recommended maintenance and/or calibration interval? Have you read your owner's manual? Leak detection hardware is to an UST what brakes are to a car. You may not know how to fix your car's brakes, but you should know how they "feel" so you can tell when something is not right. Likewise, you should know enough about your leak detection system so that you are comfortable with what it does and know how to respond when an alarm goes off or it malfunctions. If you don't have an owner's manual for your leak detection system, get one from the installer, the distributor, or the manufacturer. Spend a little time with it so that you understand the basics of how your system works, what kinds of problems it detects, what might cause false alarms, and what the warning messages mean. If the owner's manual is less than helpful, get a knowledgeable manufacturer's representative, installer, or (gulp!) regulator to give you a detailed overview of your system. Here are some leak detection essentials that you should know:

- **How often should your leak detection system be maintained?**
  If no maintenance schedule is specified in your product literature, do not be lulled into believing that your device will run unattended and trouble-free forever. If no maintenance interval is specified, a one-year maintenance schedule is recommended. At the very least, be sure that any sensors are tested annually to verify that the alarm goes off when the sensor is exposed to conditions that simulate a leak.

- **What do you do if there is an alarm?**
  Prominently post emergency response names and phone numbers and instruct on-site personnel regarding the circumstances that require notification of upper management and/or outside personnel. Ensure that on-site personnel know what to do when there is even the possibility of an emergency situation or a possible spill or leak.

- **What do you do if you keep getting false alarms?**
  One of the more vexing aspects of today's leak detection systems is that false alarms are frequent. Very often, alarms can be traced to accumulations of water in secondary containment systems or improper programming, but some devices give warnings when product levels are too low or too high or even when they are out of paper. Do whatever it takes to eliminate false alarms. If a secondary containment sump takes on water, get the installer to fix it, as this condition is most often traceable to an installation problem. If the installer can't or won't fix the problem, find another installer.

Keep an eye on inventory

Although inventory is not the best leak detection method in the world, it can still provide valuable information that can help avoid problems. If you have an ATG that gives

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you product volume information, then daily inventory variances should be very small. If this is not the case, then perhaps there is something wrong with the ATG programming, your meter calibration, or some other aspect of the inventory procedure. Once the ATG is properly calibrated, work on tuning your inventory procedures so that inventory variances can routinely be kept to single digits on most days if you don't pump much volume, or a half percent of sales if you do pump large volumes. If you can achieve this goal (and not by having someone fudge the numbers), then when there is an indication that something is wrong, inventory records can be a valuable tool in understanding the magnitude of the problem.

In a recent case in Maine, the physical evidence in the tank top sump indicated a minor release, but the inventory records indicated a much more significant problem. Had anyone paid attention to the inventory records, the true nature of the problem could have been discovered before product came pouring out into a drainage ditch.

Keep personnel informed

All on-site personnel should know the basics of how the storage system works, the meaning of the various warning signals that might occur, how to respond, and who to report to if problems are noted. Here are a few examples that illustrate why it is important to have informed personnel:

- The over-fill warning on an ATG sounded at a facility during an overfill incident that resulted in several fatalities. When the cash register attendant was asked what the alarm meant, she replied that it meant that the delivery person would soon be coming in to have her sign the delivery receipt.

- The head of a tank regulatory program traveling in another state noticed that a facility was experiencing slow flow. He reported the incident, which turned out to be a major release that had been going on for some time.

- At a recent class I was teaching for UST owners and operators, I was discussing how line-leak detectors indicate leaks by reducing the flow rate, when one of the participants in the front row of the class gasped. It seems she had a pump that had frequently experienced slow flow but she had always thought it was a problem with the pump. A little investment in employee education can have big returns in facility safety, security, and profits.

Invest in preventive maintenance

To ensure that alarms perform in a meaningful way, it is important to minimize false alarms resulting from such things as water entry into sumps, clogged filters that reduce flow rates, or equipment malfunctions. It is also important to make sure that real alarms aren't occurring because of things like leaky unions, improperly installed filters, or bad seals on meters. Have a storage system check-up conducted at least once every year. This time is a great opportunity to have spill containment manholes cleaned and repaired, overfill prevention devices checked, leak detection sensors tested, sumps checked for tightness, unions and fittings checked for leaks, ATGs maintained, piping and line leak detectors tested, crash valves checked, filters changed, hoses checked for cracks, fill caps checked for tightness, meters calibrated, and, in general, the facility looked over by a trained and experienced eye.

Historically, many UST managers have approached storage systems with an "if it ain't broke, don't fix it" attitude. As facility throughputs have increased dramatically in the last decade, equipment is being asked to work harder and longer, and customer expectations of convenience and reliability have never been higher. It is a wise UST manager who recognizes that an invoice for preventive maintenance is a much better investment than a box of "out-of-order" covers for his or her nozzles.

I haven't got time for all this!

I can hear the moans and groans from facility managers now. "I have too much to do already!" "You think I have nothing better to do than look after my storage system? I have a business to run!" Running a convenience store these days is a complex and highly competitive enterprise. Maintaining the facility appearance, retaining employees, keeping the shelves stocked and the bathroom clean, and

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managing the fuel storage system can keep a facility manager hopping.

There are several solutions:

- Delegate tasks to on-site personnel, where appropriate. Make them personally responsible for inspecting hoses, nozzles, dispensers, and spill containment manholes, and reward them for keeping things shipshape and noticing potential problems.

- If the company has a substantial number of UST facilities, hire one person whose responsibilities lie solely in the realm of underground storage. Having a knowledgeable and conscientious person in a responsible position can work wonders for keeping storage systems operational, leak-free, and in compliance.

- Establish a service contract with a reputable pump and tank contractor who will assume responsibility for routine inspections and maintenance of your UST facilities.

The Achilles' heel of UST regulations

For better or for worse, storage system technology in the United States is going to stay where it is for a while. The next big improvements in protecting human health and the environment from UST releases are going to come from people—not technology. Petroleum industry experience for many decades has been that influencing the behavior of people who manage USTs is a frustrating task. I expect that upgrading UST managers from amateurs to professionals is a challenge that will make the drive for 1998 upgrade compliance look like a picnic in the country. ■

Petro Board Rules Amended

The Petroleum Tank Release Compensation Board has amended two of its rules. The changes pertain to board definitions and requirements governing the operation and management of petroleum storage tanks.

The definition of "board staff" was changed to mean those employees of the petroleum tank release compensation board hired by the Board.

Administrative Rule 17.58.326 (Applicable Rules Governing the Operation and Management of Petroleum Storage Tanks) was changed because of the adoption of the 2003 National Fire Protection Association Uniform Fire Code by the State Fire Marshal office. The reference for the board-applicable fire code requirements was changed, but the rules themselves were not changed significantly. The word "temporarily" was replaced with "inactive" in ARM 17.58.326 because in December 2003 the Department of Environmental Quality amended its rule to refer to "inactive tanks," rather than "temporarily closed" tanks.

In addition, because the DEQ no longer issues compliance plans, ARM 17.58.326(d) was simplified to require an owner or operator to have one of the two relevant permits issued by the department, either a valid operating permit or a conditional permit. An owner or operator shall be considered to be in compliance with the tank requirements if the owner's underground storage tanks have one of the two permits.

The board rules were not changed pertaining to release reporting, initial response and corrective action requirements as set forth in Subchapters 5 and 6 of ARM Title 17, Chapter 56. The new rules became effective December 17, 2004. The board web site will reflect the rules changes at the end of February 2005. Electronic copies of the changes may be obtained by contacting Ann Root at aroot@mt.gov. ■

New DEQ Rules On Releases In Effect

Amendment of Administrative Rules of Montana (ARM) 17.56.502 and 17.56.507 and the adoption of ARM 17.56.607 and 17.56.608 pertaining to release reporting, investigation, confirmation, and corrective action for releases of petroleum products or hazardous substances from petroleum storage tanks became effective on January 14, 2005. A copy of these new rules can be located online at: **http://www.deq.state.mt.us/dir/legal/adoption.asp**

Categorizing releases

ARM 17.56.607 categorizes releases as active, resolved, transferred, or groundwater management, and describes how the department will assign and manage these categories. All releases will be categorized as active unless they meet the requirements for the resolved, transferred, or groundwater management category.

The groundwater management category is intended to include sites that exceed groundwater cleanup standards after all active cleanup requirements have been met, and conditions at the site ensure that human health and safety are protected. Groundwater management sites must meet all requirements of closure with the exception that groundwater remains contaminated above cleanup levels.

A release can be categorized as groundwater management after at least five consecutive years of groundwater monitoring indicating that the contaminant plume is stable or shrinking, the source area of the release (including free product) has been removed, engineering or institutional controls are in place to ensure risks to human health and safety are reduced to acceptable levels, and documented investigations demonstrate that taking different or additional cleanup actions is not feasible or will not cleanup the release faster than monitored natural attenuation. Groundwater monitoring of releases in the groundwater management category must continue until the release is resolved, and must be no less frequent than one monitoring event every three years.

ARM 17.56.607 also defines criteria necessary to resolve, or "close" a release. A release may be categorized as resolved if an investigation has been completed, risks to human health safety and the environment have been evaluated and found to be acceptable, the responsible party has completed all appropriate remedial actions and complied with all department requests, and the release meets all applicable environmental laws associated with the release.

ARM 17.56.607 also provides guidelines for re-categorizing resolved or groundwater management releases as active based upon information that leads the department to determine that further cleanup action is necessary.

Suspected releases

ARM 17.56.502 which addresses suspected releases has been amended to include the additional conditions that indicate a suspected release the discovery of water in the interstitial space between the tank and the tank secondary containment became a condition that requires 24-hour notification to the department. ■

Petro Board Changes Proposed In Bill

Legislation is moving forward to modify laws affecting membership and operations of the Petroleum Tank Release Compensation Board. Senate Bill 145 introduced by Senator Dan Harrington, D-Butte, proposes changes to fund eligibility, procedures for reimbursement, and to the powers and duties of the board.

Proposed amendments would change the board's membership from seven to nine members and provide for two board members as representatives of the general public instead of one. Another proposed amendment would add a board member with a background in environmental regulation, as recommended by the Legislative Audit Division.

Other proposed amendments would clarify owner-eligibility requirements under the existing statute. The amendments would make the determination of eligibility more timely, straightforward, and certain for both owners and operators, as well as the board and its staff.

Currently, the law provides eligibility criteria that are premised on two divergent timelines: the time of discovery of the release; and after the release is discovered (ongoing compliance). Generally, the proposed amend-

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Petro Board Changes Proposed In Bill - *continued from page 11*

ments transfer the after-discovery compliance/CAP implementation requirements to the reimbursement statute. The amendments also provide more certain criteria for determining eligibility for previously unknown tank releases.

The proposed amendment requires the board to conduct an analysis of the status, effectiveness, and projected liabilities of the Petroleum Tank Release Cleanup Fund. Under the proposed amendment, the board would be required to conduct the analyses at least once each biennium, and the analyses would include an assessment of the need for changes to insure the fund's continuing solvency. The proposed amendment is a direct result of a 2003 Performance Audit conducted by the Legislative Audit Division. One of the primary recommendations arising from the audit was that the statute delineating the board's powers and duties be amended to provide clear direction to the board regarding its authority to take a proactive approach in monitoring the status, liabilities, effectiveness, and solvency of the fund. ■

Proposed Law Change

The Montana Department of Environmental Quality has proposed a bill to the Legislature to modify Montana's Underground Storage Tank Act. Rep. Chris Harris, D-Bozeman, is carrying the bill. The bill, HB78, is accessible online at **http://data.opi.state.mt.us/bills/2005/billhtml/HB0078.htm.**

The law currently mandates formal enforcement on all uncorrected violations discovered by compliance inspections without regard for the significance of the violation. The amendment would eliminate full compliance as the measure for pursuing enforcement, allowing the UST Program to apply compliance assistance for less significant violations. ■